

The Thief Process for Mercury Removal from Flue Gas

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Abstract

The Thief Process is a cost-effective variation to activated carbon injection (ACI) for removal of mercury from flue gas. In this scheme, partially combusted coal from the furnace of a pulverized coal power generation plant is extracted by a lance and then re-injected into the ductwork downstream of the air preheater. Recent results on a 500-lb/h pilot-scale combustion facility show similar removals of mercury for both the Thief Process and ACI. The tests conducted to date at laboratory, bench, and pilot-scales demonstrate that the Thief sorbents exhibit capacities for mercury from flue gas streams that are comparable to those exhibited by commercially-available activated carbons.

A patent for the process was issued in February 2003. The Thief sorbents are cheaper than commercially-available activated carbons; exhibit excellent capacities for mercury; and the overall process holds great potential for reducing the cost of mercury removal from flue gas. The Thief Process was licensed to Mobotec USA, Inc. in May of 2005. Mobotec has initiated collaborative efforts with several research organizations and utilities to further develop the technology, with additional pilot-scale tests planned for 2007.